

4. Reaction product of:
  - i) about 43% by weight, of methyl methacrylate;
  - ii) about 43% by weight, of butyl acrylate; and
  - iii) about 14% by weight, of acrylic acid.
- 5 5. Disodium lauroampho diacetate available ex Rhodia as Miranol<sup>®</sup> Ultra 32.
6. 80% distilled water, 20% SD-3A alcohol ex J. T. Baker.
7. Sucrose.
8. Glucose.
9. Isomaltose.
- 10 10. Didodecyl dimethylammonium chloride.
11. Admixture of C<sub>12</sub>, C<sub>14</sub>, and C<sub>16</sub> n-alkyl, benzyl dimethyl ammonium chlorides ex Lonza.
12. 1,2-Benzisothiazolin-3-one sold under the name Proxel<sup>®</sup> GXL ex Zeneca.
13. Sodium tripolyphosphate.
14. Distilled water.

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WHAT IS CLAIMED IS:

- ✓ 1. A system for controlling plant and flower moisture transpiration, said system comprising:
- a) a first component in the form of a solution, said solution applied to the surface of a plant or flower exposed to air, said first component comprising:
- ✓ i) a polymer having a water vapor transfer rate of less than 10 g-mm/m<sup>2</sup>-day and a glass transition temperature, T<sub>g</sub>, greater than about 30 °C; +8+9  
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- ii) the balance carriers and adjunct ingredients;
- wherein said polymer is in the form of a microemulsion having a particle size less than 400 nanometers; and
- b) ✓ a second component comprising:
- i) a source of energy for the plant or flower being treated;
- ✓ ii) an antimicrobial; and opt. in water a cotton seed extract
- wherein said second component is dissolved in water to form a solution and into which solution is placed the plant or flower to be preserved.

✓ 15 2. A system according to Claim 1 wherein said microemulsion has a particle size less than 200 nanometers. said

✓ 3. A system according to Claim 2 wherein said microemulsion has a particle size less than 100 nanometers. said

✓ 20 4. A system according to Claim 1 wherein said polymer has a water vapor transfer rate of less than 7 g-mm/m<sup>2</sup>-day. said

✓ 25 5. A system according to Claim 4 wherein said polymer has a water vapor transfer rate of less than 5 g-mm/m<sup>2</sup>-day. said

✓ 6. A system according to Claim 1 wherein said polymer has a glass transition temperature, T<sub>g</sub>, greater than about 35 °C. said

✓ 30 7. A system according to Claim 6 wherein said polymer has a glass transition temperature, T<sub>g</sub>, greater than about 40 °C. said

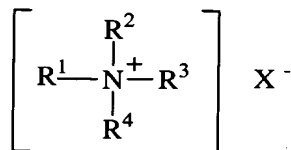
✓ 8. A system according to Claim 1 wherein said first component carrier comprises water and an alcohol selected from the group consisting of methanol, ethanol, isopropanol, n- are

propanol, ethylene glycol, propylene glycol, and mixtures thereof; wherein the ratio of water to said alcohol is from about 99:1 to about 1:99.

9. A system according to Claim 1 wherein said first component adjunct ingredients are selected from the group consisting of fragrance raw materials, pro-fragrances, pro-accords, dye, colorants, and mixtures thereof.

10. A system according to Claim 1 wherein said second component source of energy is selected from the group consisting of one or more carbohydrates, plant or flower digestible polysaccharides, and mixtures thereof.

11. A system according to Claim 1 wherein said antimicrobial has the formula:



15 wherein  $R^1$  and  $R^2$  are each independently  $C_8$ - $C_{20}$  linear or branched alkyl, benzyl, and mixtures thereof;  $R^3$  and  $R^4$  are each independently  $C_1$ - $C_4$  alkyl, and mixtures thereof; X is an anion of sufficient charge to provide electronic neutrality.

12. A system according to Claim 11 wherein  $R^1$  and  $R^2$  are each  $C_{12}$  alkyl;  $R^3$  and  $R^4$  are each methyl; X is chlorine.

✓ 13. A system according to Claim 1 wherein said second component further comprises a the calcium ion sequestrant. *is present*

25 14. A system for controlling plant and flower moisture transpiration, said system comprising:  
a) a first component in the form of a solution, said solution applied to the surface of  
✓ a plant or flower exposed to air, said first component comprising:  
i) from about 0.01% to about 20% by weight, of a polymer such that the water vapor transfer rate and glass transition temperature,  $T_g$ , of said polymer define a point to the left of a line having the equation:

$$y = -0.068443x + 10$$

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wherein the ordinate, x, is the glass transition temperature and the abscissa, y, is the water vapor transfer rate of said polymer;

ii) the balance carriers and adjunct ingredients; and

5 b) a second component comprising:

i) a source of energy for the plant or flower being treated;

ii) an antimicrobial;

wherein said second component is dissolved in water to form a solution and into which solution is placed the plant or flower to be preserved.

10 15. A system according to Claim 14 wherein said polymer comprises the reaction products of mono-carboxylic acids and the esters, amides, and anhydrides thereof comprising one olefin moiety.

15 16. A system according to Claim 15 wherein said mono-carboxylic acids are selected from the group consisting of acrylic acid, methacrylic acid, crotonic acid, and mixtures thereof.

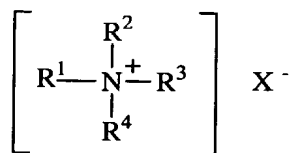
20 17. A system according to Claim 14 wherein said esters of mono-carboxylic acids are selected from the group consisting of n-propyl methacrylate, n-butyl methacrylate, methyl methacrylate, n-butyl acrylate, 2-(N,N-dimethylamino)ethyl methacrylate, and mixtures thereof.

25 18. A system according to Claim 14 wherein said polymer comprises the reaction products of mono-carboxylic acids and the esters, amides, and anhydrides thereof comprising one olefin moiety, polycarboxylic acids and the esters, amides, and anhydrides thereof comprising one olefin moiety.

30 19. A system according to Claim 18 wherein said polycarboxylic acids are selected from the group consisting of oxalic acid, succinic acid, tartaric acid, itaconic acid, maleic acid, and mixtures thereof; and the esters, amides, and anhydrides thereof.

20. A system according to Claim 14 wherein said solution of said polymer of component one forms a microemulsion having a particle size less than 400 nanometers.

- ✓ 21. A system according to Claim 20<sup>14</sup> wherein said solution of said polymer of component one forms a microemulsion having a particle size less than 200 nanometers.
22. A system according to Claim 21 wherein said solution of said polymer of component one forms a microemulsion having a particle size less than 100 nanometers.
- ✓ 23. A system according to Claim 14 wherein said first component carrier <sup>17</sup>comprises water and an alcohol selected from the group consisting of methanol, ethanol, isopropanol, n-propanol, ethylene glycol, <sup>18</sup>propylene glycol, and mixtures thereof; wherein the ratio of water to said alcohol is from about 99:1 to about 1:99.
- ✓ 24. A system according to Claim 14 wherein said first component adjunct ingredients are selected from the group consisting of fragrance raw materials, pro-fragrances, pro-accords, dye, colorants, and mixtures thereof.
- ✓ 25. A system according to Claim 14 wherein said second component source of energy is selected from the group consisting of one or more carbohydrates, <sup>19</sup>plant or flower digestible polysaccharides, and mixtures thereof.
26. A system according to Claim 14 wherein said antimicrobial has the formula:



wherein  $R^1$  and  $R^2$  are each independently  $C_8$ - $C_{20}$  linear or branched alkyl, benzyl, and mixtures thereof;  $R^3$  and  $R^4$  are each independently  $C_1$ - $C_4$  alkyl, and mixtures thereof; X is an anion of sufficient charge to provide electronic neutrality.

27. A system according to Claim 26 wherein  $R^1$  and  $R^2$  are each  $C_{12}$  alkyl;  $R^3$  and  $R^4$  are each methyl; X is chlorine.
- 30 28. A system according to Claim 14 wherein said second component <sup>the</sup> further comprises a calcium ion sequestrant. <sup>in present</sup>